

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Botany Degree Examination, November 2020

BBOT5B05 – Gymnosperms, Paleobotany, Phytogeography & Evolution

(2018 Admission onwards)

Time: 3 hours

Max. Marks: 80

PART A

(Answer all the questions)

1. Vessels are present in the xylem of ----- Gymnosperm plant.
2. Random fluctuations in the allelic frequencies happening in a small population is known as ----.
3. ----- type of fossils are having a spherical shape.
4. Continental drift hypothesis was proposed by -----.
5. The name of algae inhabiting in *Cycas* coralloid root is -----.
6. ----- is a protected area of Geological Survey of India (GSI) which is rich in fossil deposits.
7. Winged pollen grains are observed in ---- plant.
8. In Gymnosperms, the tetrasporic female gametophyte is found in -----.
9. ----- is a fossilized seed.
10. Largest ovule in plant kingdom is observed in -----.

(10 x 1= 10 marks)

PART B

(Answer all questions)

11. Give a brief note on transfusion tissue.
12. Differentiate allopatric and sympatric speciation.
13. Give an account on the polyembryony in *Gnetum*.
14. Explain land-bridge hypothesis.
15. Give any two differences between the pollen grain of *Cycas* and *Pinus*.
16. Point out the differences between normal root and coralloid root of *Cycas*.
17. Comment on the contribution of Indian Institute of Paleobotany.
18. Mention the names of various phyto-geographic zones of India.
19. Define extinction. Mention its causes.
20. Mention any four characters of *Gnetum* that it shares with the Angiosperms.

(10 x 2=20 marks)

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PART C

(Answer any six of the following)

21. Elicit the primitive characters of *Cycas*.
22. Explain various phyto-geographic zones of world that you have studied.
23. Briefly outline the primary and secondary structure of *Cycas* stem.
24. Comment on various factors causing genetic variability in population.
25. Elaborate on the morphology, structure and fructification of *Williamsonia*.
26. Explain Darwin's theory of evolution.
27. What are endemics? Comment on different types.
28. Draw a neat labelled diagram showing the internal structure of *Pinus* needle. List out its xerophytic characters.

(6 x 5 = 30 marks)

PART D

(Answer any two of the following)

29. With the help of neat labelled diagrams compare the structure of ovules in *Cycas*, *Pinus* and *Gnetum*.
30. Explain various patterns of plant distribution you have studied.
31. Write an essay on Oparin's concept on bio-chemical evolution. Explain its experimental evidence.

(2 x 10 = 20 marks)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
 Fifth Semester B.Sc Botany Degree Examination, November 2020
 BBOT5B06 – Angiosperm Morphology & Plant Systematics
 (2018 Admission onwards)

Time: 3 hours

Max. Marks: 80

PART A
 (Answer *all* the questions)

1. Thyrus found in the family _____
2. The abbreviation of OTU stands for _____
3. Binomial nomenclature proposed by _____
4. Name the fruit of Tomato.
5. Define carpel.
6. What is isotype?
7. What is Monadelphous condition.
8. Name a family with inferior ovary.
9. What is floral formula?
10. What is albuminous seed?

(10 x 1 = 10 Marks)

PART - B
 (Answer *all* questions)

11. What is a perfect flower?
12. Define buttress root.
13. Define valid publication.
14. Mention the features of coenanthium.
15. Explain the floral characters in the family Papilionaceae?
16. Write down any two principles of the International Code of Botanical Nomenclature.
17. Explain briefly the scope of Taxonomy.
18. Discuss the economic importance of Rutaceae.
19. Write a note on Taxonomic literature.
20. Explain the contributions of J. S. Gamble.

(10 x 2 = 20 Marks)

PART - C

(Answer any six of the following)

21. What is phyllotaxy? Briefly explain different kinds of Phyllotaxy.
22. Briefly explain numerical taxonomy.
23. What is a fruit? Give an account on the classification of fruits.
24. Briefly explain the floral and vegetative characters of Poaceae.
25. Give an account on special types of inflorescence.
26. Give an account on shoot modification in plants.
27. Explain the steps in preparation of herbarium.
28. Describe the diagnostic features of the family Lamiaceae

(6 x 5 = 30 Marks)

PART - D

(Answer any two of the following)

29. Write an essay on systems of classification with special reference to Bentham & Hooker's system.
30. "Asteraceae is considered as an advanced family among angiosperms". Discuss it.
Write the binomial of any four economically important plants in the family.
31. Write an essay on various types of root modification in plants.

(2 x 10 = 20 Marks)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Botany Degree Examination, November 2020

BBOT5B07 – Embryology, Palynology, Economic Botany, Ethnobotany & Horticulture

(2018 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part-A**(Answer all questions)**

1. What is double fertilization?
2. Name the taxa having monocot embryo.
3. What is Parthenocarpy?
4. Polyembryony is
5. What is Pollenkit?
6. *Olericulture* is the study of
7. What is Biopesticide?
8. What is moist chamber?
9. Comment on 'Jeevani'
10. Name the binomial of *Clove* and *Nutmeg*.

(1x10= 10 marks)**Part-B****(Answer all questions)**

11. Distinguish between epigeal and hypogeal seed germination.
12. What is double fertilization?
13. Comment on Pollen allergy.
14. Briefly describe the role of palynology in taxonomical studies.
15. What is bonsai? Name any plant suitable for bonsai preparation?
16. Write a brief note on *Oyster mushroom*.
17. Describe any one seed viability test.
18. Name the different branches of horticulture.
19. Write note on ethno botanical significances of 'Durvagrass'
20. Name the binomial, family and morphology of useful part of the following
(a) *Sugarcane* (b) *Sunflower*

(10 x 2 = 20 marks)

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Part-C

(Answer any six of the following)

21. Distinguish between Anatroous and orthotropous ovules with suitable line drawings.
22. Compare and elucidate the structure of dicot and monocot embryo.
23. Distinguish between Aeroplalynolgy and melitopalynology.
24. What are the precautions generally used to avoid pests and diseases of crops.
25. Explain various steps involved in the creation of bonsai.
26. Write notes on any five major tribes in South India.
27. Write binomial, family and morphology of useful part of any four vegetables.

(6 x 5 = 30 marks)

Part D

(Answer any two of the following)

28. Explain the structure of embryosac with special reference to *Polygonum*, *Allium* and *Adoxa* types.
29. Write an essay on indoor and outdoor gardening.
30. Give an account on various propagating structures like green house, poly house, moist chamber and net frames.

(2 x 10 = 20 marks)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Botany Degree Examination, November 2020

BBOT5B08 – General & Bioinformatics, Introductory Biotechnology & Molecular Biology
(2018 Admission onwards)

Time: 3 hours

Max. Marks: 80

Part-A**(Answer all questions)**

1. Name a metasearch engine.
2. Following links to find pages in website is called _____
3. _____ is a 3D protein viewer tool.
4. Role of alkaline phosphatase in genetic engineering.
5. Give examples of any two TG plants
6. What is genetic code?
7. What is a ribozyme?
8. What is silent mutation?
9. How can the host cells be made competent?
10. Haploid plants were generated by _____

(1 x 10= 10 marks)**Part-B****(Answer all questions)**

11. Write a note on edible vaccines.
12. What is Bio-computing?
13. What is meant by physical map? How is it different from genetic map?
14. What is a frameshift mutation?
15. Write notes on genomic library.
16. Briefly explain application of biotechnology in medical field?
17. Write the characteristics features of Ti plasmid vectors.
18. What are enhancers and silencers?
19. What is cistron?
20. What is the advantage of degeneracy of genetic code?

(10 x 2 = 20 marks)

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Part-C
(Answer any six of the following)

21. Enumerate the application of IT in medical filed.
22. How will you predict the structure of a protein using bioinformatics tools?
23. Give the structural features of pBR322. What are the useful properties of this vector?
24. Briefly explain gene transfer methods employed in genetic engineering.
25. Describe the application of somaclonal variation in agriculture.
26. Describe the features of DNA structure proposed by Watson and Crick.
27. Briefly explain the regulation of eukaryotic gene expression.
28. Explain the mechanism of transcription in prokaryotes.

(6 x 5 = 30 marks)

Part D
(Answer any two of the following)

29. Describe the role of enzymes in DNA replication in prokaryotes and eukaryotes.
30. Write an essay on different methods and applications of micropropagation.
31. Briefly explain the tools of bioinformatics for sequence alignment and homology search.

(2 x 10 = 20 marks)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Botany(Open Course) Degree Examination, November 2020

BBOT5D02 – Applied Botany

(2018 Admission onwards)

Time: 2 hours

Max. Marks: 40

Part-A
(Answer all questions)

1. Name one plant propagated by Stem cuttings
2. Part of the plant used for micropropagation is called _____
3. pH of acidic soil is _____
4. Write the scientific names of Rice and Ginger
5. The lower portion of a graft from which the roots are formed is called _____

(1 x 5 = 5 marks)

Part-B
(Answer all questions)

6. What is Organic manure?
7. What is spawn?
8. What is humus?
9. Write the binomial, family and morphology of the useful parts of (a) Mango (b) Cotton
10. Write a note on Repotting?

(5 x 2 = 10 marks)

Part-C
(Answer any three of the following)

11. Describe the various methods of plant protection
12. Briefly explain steps on cultivation of mushrooms.
13. What is meant by irrigation? Briefly explain the different methods of irrigation.
14. Write a short account on vegetable gardening
15. Give a general account on various pulses you have studied.

(3 x 5 = 15 marks)

Part D
(Answer any one of the following)

16. Describe different methods of artificial vegetative propagation
17. Write an essay on Vermi composting.

(1 x 10 = 10 marks)